International Journal of Biometeorology

Journal of the International Society of Biometeorology

edited by

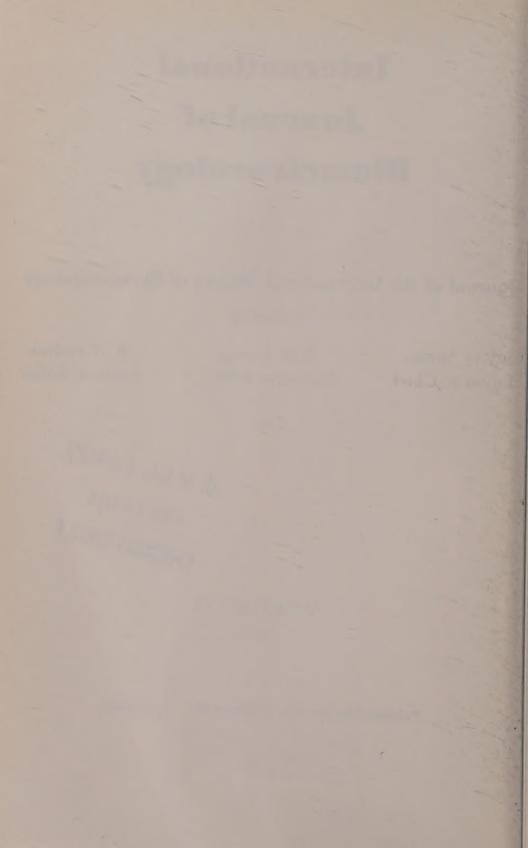
W.H. Weihe Editor-in-Chief

S.W. Tromp Executive Editor R.W. Gloyne Assistant Editor

U. of ILL. LIBRARY
FEB 1 2 1974
CHICAGO CIRCLE

VOLUME 17 1973

Published by Swets & Zeitlinger B.V., Amsterdam



CONTENTS OF VOLUME 17 NUMBER 1 - March 1973

L'W	
Effects of Urbanization on Turbulent Diffusion and Mixing Depth. F. L. Ludwig and W. F. Dabberdt	1
A Computer Model of the House-Environment System. A. Faegre	13
Do Air Monitoring Station Data Represent the Surrounding Community Exposure? N.M. Perkins	23
Thermoregulatory Responses of Japanese Quail to Various Air Temperatures and Humidities. J.D. Chilgren and J.R. King	29
Light-Dark Cycle and the Response of Liver Temperature to Cold in the Rat. M. Kikuchi, M. Chiba and A. Yoshida	41
The Role of the Sympathetic Nervous System During Exposure to Altitude in Rats. W.S.Myles and A.J.Ducker	51
Tolerance of Cold-Acclimated and Unacclimated Rats to Hypoxia at 1.7°C. P.D.Altland, B.Highman and R.G.Sellner	59
Reversal of Abnormal Fibrinolytic Activity, Blood Coagulation Factors and Platelet Function in High-Altitude Pulmonary Oedema with Frusemide. I. Singh and I. S. Chohan	73
Effect of Adaptation to Altitude on the Myocardial Noradrenaline Content and on the Resistance of Adrenergic Mechanisms to Acute Cardiac Overload in Rats. F.Z. Meerson and M.G. Pshennikova	83
Heat Output from the Hand of Men During Acclimatization to Altitude and Cold. C.S. Nair, M.S. Malhotra and O.P. Tiwari	95
SCIENTIFIC NOTE. Effect of Weather on the Potassium Content in the Myocardium of Mice. A. Serban, et al.	103
NUMBER 2 - June 1973	
In Memoriam Dr Michael Morag.	105
SYMPOSIUM	
on ANIMAL REPRODUCTION IN TROPICAL CLIMATES Held during the 6th International Biometeorological Congress at Noordwijk, The Netherlands, 3-9 September 1972 Chairman: N.T.G.Hyslop	
Productivity, Disease and Climate: An Introduction. N.T.G. Hyslop	107
Ram Fertility and Fertilization Rates in the Ewe in a Semi-Arid Tropical Environment. K.W. Entwistle	109
Climatic Thermal Stress, a Cause of Hormonal Depression and Low Fertility in Bovine. G.H.Stott and F.Wiersma	115
The Effects of Temporal Variation in the Water Climate on Beef Cattle Reproduction in the Seasonally Dry Tropics of Australia. B.D.Siebert	123

Estimation of Conception Rate Depression of Holstein Cows Due to Adverse Temperature and Humidity in Tropical and Subtropical	131
Climates. R.H. Ingraham	191
Beef Cattle Reproduction in the Wet Tropics. O.Wayman, C.M.Campbell, D.Reimer, H.R.Donoho and R.M.Nakamura	135
Bioclimatic Influences on the Reproductive Processes in Swine in a Humid-Tropical Environment. J. Steinbach	141
The Influence of Climate on the Reproduction of Cattle. H.A.W. Venter, J.C. Bonsma and J.D. Skinner	147
Effects of Heat Stress and Melengestrol Acetate on Amino Acid Pattern of Uterine Fluid from Dairy Heifers. J.D.Roussel and W.C.Loe	153
Unterschiedliche Reaktionen von Rindern auf Wärmebelastungen und ihr Vergleich mit denen der männlichen Nachkommen. E.O.Stephan	157
Critical Temperatures in Lactating Dairy Cattle: A New Approach to an Old Problem. A. Berman and A. Meltzer	167
Serum Creatine Phosphokinase Levels in Rats Following Cold Injury. W.S. Myles and T.E. Brown*	177
The Causes of Tattering of Flags under Natural Conditions. W.H.Jack and P.S.Savill*	185
The Incidence of the Common Cold in Relation to Certain Meteorological Parameters. D.S.B. Fellowes and I.R.D. Proctor*	193
NUMBER 3 - September 1973	
SYMPOSIUM	
on BIOLOGICAL EFFECTS OF NATURAL ELECTRIC, MAGNETIC AND ELECTROMAGNETIC FIELDS Held during the 6th International Biometeorological Congress at	
Noordwijk, The Netherlands, 3-9 September 1972 Chairman: R. Reiter	
Introductory Remarks. R. Reiter	205
Shielding Effect of Materials in the ULF, ELF and VLF Region. H.W. Ludwig	207
Biological Effects of Technical Electric and Electromagnetic VLF Fields. R. Hauf and J. Wiesinger	213
Some Behavioral Effects of Pre- and Neo-Natal Exposure to an ELF Rotating Magnetic Field. M.A. Persinger and K. P. Ossenkopp	217
Some Effects of Continuous and Pulsating Electric Fields on Brain Wave Activity in Rats. J.R. Lott and H.B. McCain	
Human Circadian Rhythms under the Influence of Weak Electric Fields and the Different Aspects of These Studies. R. Wever	221
Etude du gradient de champ électrique dans ses rapports physio-patho-	227
logiques chez des sujets hivernant à Kerguelen. F. Callot, J. Lecoeur et J. Rivolier	233
Discharge Experiments Using Dummies and Rabbits Simulating Lightning Strokes on Human Bodies. N. Kitagawa, K. Kinoshita and T. Ishikawa	239
Note: Titles marked with * do not belong to the Symposia.	

Barley Leaf Tip Damage Resulting from Exposure to High Electrical Fields. C.H. Bachman and M. Reichmanis	243
Some Effects of High Electrical Fields on Barley Growth. C.H. Bachman and M. Reichmanis	253
Possible Cardiac Driving by an External Rotating Magnetic Field. M.A. Persinger	263
Effect of Negative Air Ions upon Emotionality and Brain Serotonin Levels in Isolated Rats. G.O.Gilbert*	267
Influence des ions atmosphériques négatifs sur l'adaptation à une situation anxiogène chez le rat. J. M. Olivereau*	277
Variations in Migraine Attacks with Changes in Weather Conditions. J.D. Gomersall and Alice Stuart*	285
Evapotranspiration by Beans during Low-Volume Sprinkling. K.K.Krog-man and E.H.Hobs*	301
Reports and News: La médécine thermale en Europe.*	307
In Memoriam Dr Igho H. Kornblueh. A. P. Wehner*	309
NUMBER 4 - December 1973	
SYMPOSIUM	
on	
EFFECTS OF WEATHER AND CLIMATE ON PLANTS AND TREES Held during the 6th International Biometeorological Congress at Noordwijk, The Netherlands, 3-9 September 1972 Chairman: W. Baier	
Part I: Computer Simulation Chairman: W. Baier	
Introductory Remarks. W. Baier	311
Crop-Weather Analysis Model. 1. Summary. W. Baier	313
The Application of Similarity Analysis to the Vegetative Growth of AVENA SATIVA (Oats). G.E.Meyer, C.S.Chen and J.T.Clayton	321
Digital Computer Simulation of Heat Units and Their Use for Predicting Plant Maturity. C.S. Chen	329
Analysis of Stomatal and Convective Resistances to Transpirational Flow. S.I.Ajiri, J.T.Clayton and C.S.Chen	337
Part II: Crop Production in Higher Latitude, Maritime Areas Chairman: R.W.Gloyne	
Introductory Remarks. R.W.Gloyne	345
Crop Production in Higher Latitude, Maritime Areas. R.W. Gloyne	349
influence of Climate on Primary Production in a Northern Mountain Area. F.E.Wielgolaski	355
Crop Production in Iceland. S. Fridriksson	359
Harvest Yield and the Profitableness of Arable Farming in Finland in the Period 1950-1969. U. Varjo	363

Crop Production and Climate in Ireland, M.A.McEntee	371
Climatic Limitations on Horticultural Production, with Particular Reference to Scottish Conditions. P.D.Waister	379
Pasture Production and Evaluation in a Lowland and Hill Area in North Wales. I. A Case Study. M.B.Alcock	385
Pasture Production and Evaluation in a Lowland and Hill Area in North Wales. II. Methodology. M.B.Alcock	391
Winter Survival of Ornamental Plants in Norway, F.E. Wielgolaski	397
Development of Plum Trees and Quality of Fruit of the Plum Variety "Victoria" in Relation to Climate and Soil. F.E.Wielgolaski	401
Some Factors Influencing Water Loss from Grasses during Conservation.	407